

ITEM 691

TWELVE-INCH SIGNAL HEAD
WITH PROGRAMMABLE VISIBILITY OF SIGNAL FACES

691.1 Description. The intent of this specification is to describe a 12-inch adjustable programmable limiting traffic signal head which shall permit the visibility zone of the indication to be determined optically.

The head shall employ no louvers or hoods to obtain this programmable limitation, however, if required, hoods shall be provided to eliminate extraneous light falling on the lens.

The projected indication may be selectively visible or veiled anywhere within 15 degrees of the optical axis.

691.2 Optical System. The optical system shall consist of the following basic components:

- A. Lamp
- B. Lamp Collar
- C. Optical Limiter-Diffuser
- D. Objective Lens

All other minor components necessary for the full utilization of the programmable head shall be provided.

The lamp shall be a nominal 150 watt, 120 volt, a.c., three prong, sealed beam having an integral reflector. The lamp shall have an average rated life of at least 6000 hours.

The optical limiter shall provide an accessible imaging surface at focus on the optical axis for objects 900 to 1200 feet distance. It shall permit an effective veiling mask to be variously applied as determined by the desired visibility zone.

The objective lens shall be a high resolution planar incremental lens. The lens shall be symmetrical in outline so that it may be rotated to any 90 degree orientation about the optical axis.

The optical system shall accommodate projection of diverse, selected indicia to separate portions of the roadway such that only one indication will be simultaneously apparent to any viewer. The projected

indication shall conform to ITE transmittance and chromaticity standards.

- 691.3 Construction. Signal housings shall be die-cast conforming to the latest ITE specification alloy and tensile requirements. The exterior of the signal housing, lamp housing and mounting flanges shall be finished with two coats of separately baked on high quality enamel paint. The exterior color of the signal head with the exception of the inside of the visors shall be Federal Yellow unless otherwise specified on the drawings. The inside of the visors shall be painted a dull black.

Hinges and latch pins shall be stainless steel.

All access openings not otherwise utilized for mounting hardware or other purposes shall be sealed with weather resistant rubber gaskets so that the resulting housing shall be moisture and dust proof.

The complete signal head shall consist of three or more individual sections, as shown on the drawings. The lens to be furnished likewise shall be as shown on the drawings. Heat resistant tape or other masking material shall be provided in sufficient quantity to adequately tape or mask all sections as specified. Lamps as specified shall be provided for each required signal section so that each signal head will be a complete unit.

If so specified on the drawings, each individual signal section shall be equipped with a photo-electrical cell. Lamp intensity shall not be less than 97 percent of uncontrolled intensity at 1000 ft-c and shall reduce 15+ 2 percent of maximum at less than one ft-c. The photo-electric cell shall be responsive within the range of 105 to 135 VAC, 60 cycles.

Lamp fixture shall comprise a separately accessible housing and integral lamp support, ceramic socket and self-aligning, quick release lamp retainer. Each signal section shall include a terminal block for screw-type attachment of lead wires. Concealed No. 18 stranded and coded copper wire shall interconnect all sections to permit field connection within any section.

- 691.4 Mounting and Installation. The signal shall mount to standard 1-1/2 inch fittings as a single section, multiple sections or in combination with other signals. The fittings shall be provided with the signal head and shall be mounted as indicated on the drawings. The signals shall be mountable with ordinary tools and capable of being serviced with no tools.

- 691.5 Guarantee. It is normal trade practice for the manufacturer to furnish a guarantee for the work provided herein. The Contractor shall turn this guarantee over to the Engineer for potential dealing with the guarantor.

The extent of such guarantee will not be a factor in selecting the successful bidder.

691.6 Measurement and Payment. Programmable Traffic Signal Heads shall be paid by each signal head assembly installed, including all required mounting hardware.

There are line code(s), description(s) and unit(s) for this item.

END OF ITEM 691